PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

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Application No.: New Rule 1.53(b) Divisional of U.S.S.N. 09/101,083

Filed: July 10, 2001 Docket No.: 101050.02

For: METHOD OF MANUFACTURING ORGANIC EL ELEMENT, ORGANIC EL ELEMENT, AND ORGANIC EL DISPLAY DEVICE

PRELIMINARY AMENDMENT

Director of the U.S. Patent and Trademark Office
Washington, D. C. 20231

Sir:

Prior to initial examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please cancel claims 1-24 without prejudice to or disclaimer of the subject matter contained therein.

Please add new claims 25-75 as follows:

--25. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of:

depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, whereby said organic material remains on the substrate.--

--26. The process of claim 25, further comprising drying the deposited material to remove said solvent.--

--27. The process of claim 25 wherein said organic material is a luminescent polymer.--

--28. The process of claim 25 wherein said material includes polyvinylcarbazol film.--

--29. The process of claim 25 wherein said solvent is chloroform.--

--30. The process of claim 25 wherein said material includes light emitting dyes.--

--31. The process of claim 30 wherein said light emitting dyes include coumarin and nile red.--

--32. The process of claim 31 wherein said coumarin is coumarin 6.--

--33. The process of claim 31 wherein said coumarin is coumarin 47.--

--34. The process of claim 31 wherein said coumarin is coumarin 6 and coumarin 47.--

--35. The process of claim 25 wherein said organic material is a mixture of polymers and other organic molecules.--

--36. A process for making organic light emitting diodes comprising the steps of:

depositing a semiconducting organic material in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, said organic material remaining on the substrate.--

--37. The process of claim 36 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.--

--38. The process of claim 37 further including the step of metallizing said ink-jet printed substrates.--

--39. The process of claim 38 further including the step of depositing with ink-jet printing top metal contacts on said substrate.--

--40. The process of claim 39 wherein said top metal contacts are deposited through a shadow mask.--

--41. The process of claim 36 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.--

--42. The process of claim 39 wherein said top metal contacts are deposited in a pattern.--

--43. The process of claim 41 wherein said bottom metal contacts are deposited in a pattern.--

--44. The process of claim 36 further wherein said organic material includes light emitting dyes.--

--45. The process of claim 44 further including the step of depositing top contacts on said organic material by ink jet printing.--

--46. The process of claim 45 further including the step of depositing bottom contacts on said substrate by ink-jet printing.--

--47. A process of forming thin film field effect transistors comprising the steps of:

forming a gate electrode on a substrate;

forming a gate insulator over said gate electrode;

forming a polymer semiconducting layer on said insulator by ink-jet printing; and

forming source and drain contacts on said semiconducting layer.--

--48. The process of claim 47 wherein said gate insulator is formed by ink-jet printing, and the semiconducting layer by other techniques.--

--49. The process of claim 47 wherein the source and drain contacts are applied directly on the gate insulator before the semiconducting layer is deposited.--

--50. The process of claim 48 wherein the source and drain contacts are applied directly on the gate insulator before the semiconducting layer is deposited.--

--51. The process of claim 47 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--

--52. The process of claim 48 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--

--53. The process of claim 49 wherein the semiconducting layer comprises a non-polymeric organic film or a polymer/small organic molecule blend.--

--54. A process for forming a pattern on a substrate by deposition of an organic material comprising the steps of:

depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, whereby said organic material remains on the substrate.--

--55. The process of claim 54, further comprising drying the deposited material to remove said solvent.--

--56. The process of claim 54 wherein said organic material is semiconducting.--

--57. The process of claim 54 wherein said organic material is a luminescent polymer.--

--58. The process of claim 54 wherein said solvent is chloroform.--

--59. The process of claim 54 wherein said material includes light emitting dyes.--

--60. The process of claim 59 wherein said light emitting dyes include coumarin and nile red.--

--61. The process of claim 60 wherein said coumarin is coumarin 6.--

--62. The process of claim 60 wherein said coumarin is coumarin 47.--

--63. The process of claim 60 wherein said coumarin is coumarin 6 and coumarin 47.--

--64. The process of claim 54 wherein said organic material is a mixture of polymers and other organic molecules.--

--65. A process for making organic light emitting diodes comprising the steps of:

depositing organic material including polyvinylcarbazol film in a solvent onto a substrate by ink-jet printing; and

evaporating the solvent, said organic material remaining on the substrate.--

--66. The process of claim 65 wherein said depositing step operates an ink-jet printer in a mode to create a continuous sheet of polymer.--

--67. The process of claim 66 further including the step of metallizing said ink-jet printed substrates.--

--68. The process of claim 67 further including the step of depositing with ink-jet printing top metal contacts on said substrate.--

--69. The process of claim 68 wherein said top metal contacts are deposited through a shadow mask.--

--70. The process of claim 65 further including the step of depositing with ink-jet printing bottom metal contacts on said substrate.--

--71. The process of claim 68 wherein said top metal contacts are deposited in a pattern.--

--72. The process of claim 70 wherein said bottom metal contacts are deposited in a pattern.--

--73. The process of claim 65 further wherein said organic material includes light emitting dyes.--

--74. The process of claim 73 further including the step of depositing top contacts on said organic material by ink jet printing.--

--75. The process of claim 74 further including the step of depositing bottom contacts on said substrate by ink-jet printing.--

REMARKS

Claims 25-75 are pending. By this Amendment, claims 1-24 are canceled, and claims 25-75 are added.

Prompt and favorable examination on the merits is respectfully requested.

Respectfully submitted,

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